

Project Management Indicator Species Report

Yuba Trails Enhancement

Yuba River Ranger District

Tahoe National Forest

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1. Introduction

The purpose of this report is to evaluate and disclose the impacts of the Yuba Trails Enhancement Project on the habitat of the thirteen (13) Management Indicator Species (MIS) identified in the Forest (NF) Land and Resource Management Plan (LRMP) (USDA 1990) as amended by the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS Amendment) Record of Decision (USDA Forest Service 2007a). This report documents the effects of the proposed action and alternatives on the habitat of selected project-level MIS. Detailed descriptions of the Yuba Trails Enhancement Project alternatives are found in the Yuba Trails Enhancement Project NEPA document (USDA Forest Service 2018).

MIS are animal species identified in the SNF MIS Amendment Record of Decision (ROD) signed December 14, 2007, which was developed under the 1982 National Forest System Land and Resource Management Planning Rule (1982 Planning Rule) (36 CFR 219). Guidance regarding MIS set forth in the Tahoe National Forest LRMP as amended by the 2007 SNF MIS Amendment ROD directs Forest Service resource managers to (1) at project scale, analyze the effects of proposed projects on the habitat of each MIS affected by such projects, and (2) at the bioregional scale, monitor populations and/or habitat trends of MIS, as identified in the Tahoe National Forest LRMP as amended.

1.a. Direction Regarding the Analysis of Project-Level Effects on MIS Habitat

Project-level effects on MIS habitat are analyzed and disclosed as part of environmental analysis under the National Environmental Policy Act (NEPA). This involves examining the impacts of the proposed project alternatives on MIS habitat by discussing how direct, indirect, and cumulative effects will change the habitat in the analysis area.

These project-level impacts to habitat are then related to broader scale (bioregional) population and/or habitat trends. The appropriate approach for relating project-level impacts to broader scale trends depends on the type of monitoring identified for MIS in the LRMP as amended by the SNF MIS Amendment ROD. Hence, where the Tahoe NF LRMP as amended by the SNF MIS Amendment ROD identifies distribution population monitoring for an MIS, the project-level habitat effects analysis for that MIS is informed by available distribution population monitoring data, which are gathered at the bioregional scale. The bioregional scale monitoring identified in the Tahoe NF LRMP, as amended, for MIS analyzed for the Yuba Trails Enhancement Project is summarized in Section 3 of this report.

Adequately analyzing project effects to MIS generally involves the following steps:

- Identifying which habitat and associated MIS would be either directly or indirectly affected by the project alternatives; these MIS are potentially affected by the project.
- Summarizing the bioregional-level monitoring identified in the LRMP, as amended, for this subset of MIS.
- Analyzing project-level effects on MIS habitat for this subset of MIS.
- Discussing bioregional scale habitat and/or population trends for this subset of MIS.

- Relating project-level impacts on MIS habitat to habitat and/or population trends at the bioregional scale for this subset of MIS.

These steps are described in detail in the Pacific Southwest Region's draft document "MIS Analysis and Documentation in Project-Level NEPA, R5 Environmental Coordination" (May 25, 2006) (USDA Forest Service 2006a). This Management Indicator Species (MIS) Report documents application of the above steps to select project-level MIS and analyze project effects on MIS habitat for the Yuba Trails Enhancement Project.

1.b. Direction Regarding Monitoring of MIS Population and Habitat Trends at the Bioregional Scale.

The bioregional scale monitoring strategy for the Tahoe NF's MIS is found in the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS Amendment) Record of Decision (ROD) of 2007 (USDA Forest Service 2007a). Bioregional scale habitat monitoring is identified for all twelve of the terrestrial MIS. In addition, bioregional scale population monitoring, in the form of distribution population monitoring, is identified for all of the terrestrial MIS except for the greater sage-grouse. For aquatic macroinvertebrates, the bioregional scale monitoring identified is Index of Biological Integrity and Habitat. The current bioregional status and trend of populations and/or habitat for each of the MIS is discussed in the 2010 Sierra Nevada Forests Bioregional Management Indicator Species (SNF Bioregional MIS) Report (USDA Forest Service 2010a).

● MIS Habitat Status and Trend.

All habitat monitoring data are collected and/or compiled at the bioregional scale, consistent with the LRMP as amended by the 2007 SNF MIS Amendment ROD (USDA Forest Service 2007a).

Habitats are the vegetation types (for example, early seral coniferous forest) or ecosystem components (for example, snags in green forest) required by an MIS for breeding, cover, and/or feeding. MIS for the Sierra Nevada National Forests represent 10 major habitats and 2 ecosystem components (USDA Forest Service 2007a), as listed in Table 1. These habitats are defined using the California Wildlife Habitat Relationship (CWHR) System (CDFG 2005). The CWHR System provides the most widely used habitat relationship models for California's terrestrial vertebrate species (ibid). It is described in detail in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a).

Habitat status is the current amount of habitat on the Sierra Nevada Forests. Habitat trend is the direction of change in the amount or quality of habitat over time. The methodology for assessing habitat status and trend is described in detail in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a).

● MIS Population Status and Trend.

All population monitoring data are collected and/or compiled at the bioregional scale, consistent with the LRMP as amended by the 2007 SNF MIS Amendment ROD (USDA Forest Service 2007a). The information is presented in detail in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a).

Population monitoring strategies for MIS of the Tahoe NF are identified in the 2007 Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment ROD (USDA Forest Service 2007a). Population status is the current condition of the MIS related to the population monitoring data required in the 2007 SNF MIS Amendment ROD for that MIS. Population trend is the direction of change in that population measure over time.

There are a myriad of approaches for monitoring populations of MIS, from simply detecting presence to detailed tracking of population structure (USDA Forest Service 2001, Appendix E, page E-19). A distribution population monitoring approach is identified for all of the terrestrial MIS in the 2007 SNF MIS Amendment, except for the greater sage-grouse (USDA Forest Service 2007a). Distribution population monitoring consists of collecting presence data for the MIS across a number of sample locations over time. Presence data are collected using a number of direct and indirect methods, such as surveys (population surveys), bird point counts, tracking number of hunter kills, counts of species sign (such as deer pellets), and so forth. The specifics regarding how these presence data are assessed to track changes in distribution over time vary by species and the type of presence data collected, as described in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a).

- **Aquatic Macroinvertebrate Status and Trend.**

For aquatic macroinvertebrates, condition and trend is determined by analyzing macroinvertebrate data using the predictive, multivariate River Invertebrate Prediction And Classification System (RIVPACS) (Hawkins 2003) to determine whether the macroinvertebrate community has been impaired relative to reference condition within perennial water bodies. This monitoring consists of collecting aquatic macroinvertebrates and measuring stream habitat features according to the Stream Condition Inventory (SCI) manual (Frasier et al. 2005). Evaluation of the condition of the biological community is based upon the “observed to expected” (O/E) ratio, which is a reflection of the number of species observed at a site versus the number expected to occur there in the absence of impairment. Sites with a low O/E scores have lost many species predicted to occur there, which is an indication that the site has a lower than expected richness of sensitive species and is therefore impaired.

2. Selection of Project level MIS

Management Indicator Species (MIS) for the Tahoe NF are identified in the 2007 Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment (USDA Forest Service 2007a). The habitats and ecosystem components and associated MIS analyzed for the project were selected from this list of MIS, as indicated in Table 1. In addition to identifying the habitat or ecosystem components (1st column), the CWHR type(s) defining each habitat/ecosystem component (2nd column), and the associated MIS (3rd column), the Table discloses whether or not the habitat of the MIS is potentially affected by the Yuba Trails Enhancement Project (4th column).

Table 1. Selection of MIS for Project-Level Habitat Analysis for the Yuba Trails Enhancement Project.

Habitat or Ecosystem Component	CWHR Type(s) defining the habitat or ecosystem component¹	Sierra Nevada Forests Management Indicator Species <i>Scientific Name</i>	Category for Project Analysis²
Riverine & Lacustrine	lacustrine (LAC) and riverine (RIV)	aquatic macroinvertebrates	2
Shrubland (west-slope chaparral types)	montane chaparral (MCP), mixed chaparral (MCH), chamise-redshank chaparral (CRC)	fox sparrow <i>Passerella iliaca</i>	3
Sagebrush	Sagebrush (SGB)	greater sage-grouse <i>Centrocercus urophasianus</i>	1
Oak-associated Hardwood & Hardwood/conifer	montane hardwood (MHW), montane hardwood-conifer (MHC)	mule deer <i>Odocoileus hemionus</i>	2
Riparian	montane riparian (MRI), valley foothill riparian (VRI)	yellow warbler <i>Dendroica petechia</i>	2
Wet Meadow	Wet meadow (WTM), freshwater emergent wetland (FEW)	Pacific tree (chorus) frog <i>Pseudacris regilla</i>	1
Early Seral Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree sizes 1, 2, and 3, all canopy closures	Mountain quail <i>Oreortyx pictus</i>	2
Mid Seral Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 4, all canopy closures	Mountain quail <i>Oreortyx pictus</i>	3
Late Seral Open Canopy Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 5, canopy closures S and P	Sooty (blue) grouse <i>Dendragapus obscurus</i>	2
Late Seral Closed Canopy Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), tree size 5	California spotted owl <i>Strix occidentalis occidentalis</i>	3
		American marten	

	(canopy closures M and D), and tree size 6.	<i>Martes americana</i> northern flying squirrel <i>Glaucomys sabrinus</i>	
Snags in Green Forest	Medium and large snags in green forest	hairy woodpecker <i>Picoides villosus</i>	2
Snags in Burned Forest	Medium and large snags in burned forest (stand- replacing fire)	black-backed woodpecker <i>Picoides arcticus</i>	1

¹ All CWHR size classes and canopy closures are included unless otherwise specified; **dbh** = diameter at breast height; **Canopy Closure classifications:** S=Sparse Cover (10-24% canopy closure); P= Open cover (25-39% canopy closure); M= Moderate cover (40-59% canopy closure); D= Dense cover (60-100% canopy closure); **Tree size classes:** 1 (Seedling)(<1" dbh); 2 (Sapling)(1"-5.9" dbh); 3 (Pole)(6"-10.9" dbh); 4 (Small tree)(11"-23.9" dbh); 5 (Medium/Large tree)(≥24" dbh); 6 (Multi-layered Tree) [In PPN and SMC] (Mayer and Laudenslayer 1988).

² **Category 1:** MIS whose habitat is not in or adjacent to the project area and would not be affected by the project.

Category 2: MIS whose habitat is in or adjacent to project area, but would not be either directly or indirectly affected by the project.

Category 3: MIS whose habitat would be either directly or indirectly affected by the project.

The project area includes all trail proposals, including re-routes and decommissioning, and an area extending out 0.25 miles either side of the trails. This area would address potential direct and indirect effects to species habitats within proximity to the trail system. There are no proposals within any of the following MIS habitats: lacustrine, sagebrush, wet meadows, snags in burned forests. Trail proposals would traverse riparian habitats, but the project Management Requirements would install bridges at creek crossings. Project Best Management Practices are included to protect riparian vegetation, and project actions would not affect or change any riverine or riparian habitats. Additionally, the following MIS habitats occur within the project area, but trail proposals do not traverse these habitats or would cause these habitats to be altered: hardwood and hardwood/conifer, early seral coniferous, late seral open canopy coniferous forest. This project does not propose to remove any snags, and only snags that are hazardous to worker safety would be removed as required to meet California State OSHA requirements. Because this would only occur incidentally to other activities, this habitat component is not analyzed.

The MIS whose habitat would be either directly or indirectly affected by the Yuba Trails Enhancement Project, identified as Category 3 in Table 1, are carried forward in this analysis, which will evaluate the direct, indirect, and cumulative effects of the proposed action and alternatives on the habitat of these MIS. The MIS selected for project-level MIS analysis for the Yuba Trails Enhancement Project are: fox sparrow (shrublands), mountain quail (Mid-seral coniferous forests) and the California spotted owl, American marten, and northern flying squirrel (Late Successional Closed canopy coniferous forests).

3. Bioregional Monitoring Requirements for MIS Selected for Project-Level Analysis

3.a. MIS Monitoring Requirements.

The Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment (USDA Forest Service 2007a) identifies bioregional scale habitat and/or population monitoring for the Management Indicator Species for ten National Forests, including the Tahoe NF. The habitat and/or population monitoring requirements for the Tahoe NF's MIS are described in the 2010 Sierra Nevada Forests Bioregional Management Indicator Species (SNF Bioregional MIS) Report (USDA Forest Service 2010a) and are summarized below for the MIS being analyzed for the Yuba Trails Enhancement Project. The applicable habitat and/or population monitoring results are also described in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a) and are summarized in Section 5 below for the MIS being analyzed for the Yuba Trails Enhancement Project.

Habitat monitoring at the bioregional scale is identified for all the habitats and ecosystem components, including the following analyzed for the Yuba Trails Enhancement Project: shrubland; mid seral coniferous forest; late seral closed canopy coniferous forest.

Population monitoring at the bioregional scale for fox sparrow, mountain quail, California spotted owl, American marten, northern flying squirrel: Distribution population monitoring. Distribution population monitoring consists of collecting presence data for the MIS across a number of sample locations over time (also see USDA Forest Service 2001, Appendix E).

3.b. How MIS Monitoring Requirements are Being Met.

Habitat and/or distribution population monitoring for all MIS is conducted at the Sierra Nevada scale. Refer to the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a) for details by habitat and MIS.

4. Description of Proposed Project.

The Forest Service is proposing the Yuba Trails Enhancement Project to: (1) re-route four motorized trail segments; (2) remove three existing unauthorized routes; and (3) construct two connector motorized trails on National Forest System lands on the Yuba River Ranger District of the Tahoe National Forest. These actions are needed to address ongoing soil erosion and potential water quality impacts associated with existing steep, motorized trails and unauthorized routes in this area. The proposed actions would address soil erosion and water quality concerns, provide for a sustainable trail system, improve motorized recreation opportunities, and enhance trail users' experiences.

The Project area is located north of the community of Downieville (T 20 & 21N, R10E & R11E, multiple sections) and entirely within Sierra County (Figure 1). The four proposed motorized trail re-routes and three unauthorized route removals are located within the East and West Yuba Inventoried Roadless Areas. The two proposed motorized connector trails lie outside the Inventoried Roadless Areas.

The proposed action has three components: (1) four motorized trail re-routes followed by subsequent decommissioning and restoration of the replaced trail sections; (2) removal of three existing unauthorized routes through restoration to a natural state; and (3) construction of two connector motorized trails.

Trail Re-Routes

The four proposed motorized trail reroutes are designed to eliminate problems associated with overly steep and heavily eroding portions of the Rattlesnake/Downie River Trail, Pauley Creek Trail, Big Boulder Trail, and Lavezzola Trail as follows:

Downie River / Rattlesnake Trail : The Project would re-route approximately 1.5-miles of the steep existing Rattlesnake trail segment (25-40% grades) that is intercepting a drainage, and replace it with an approximately 2.5 miles of multiple use motorized single track trail with a grade of 5-10%. With the proposed re-route, the entire trail length will be called the Downie River Trail. The Project would decommission and restore to natural grade the existing 1.5-mile steep section of trail (25-40% grades).

Pauley Creek Trail : The Project would re-route approximately 0.5 miles of a steep existing trail segment (25-35% grades) that climbs straight up and replace it with approximately 0.5 miles of multiple use motorized single track trail with grades of 5-10%. The Project would decommission and restore to natural grade 0.5 miles of a steep existing section of trail (25-35% grades).

Lavezzola Trail: The Project would re-route approximately 2 miles of a steep existing trail segment (25-40% grades) that climbs straight up and replace it with approximately 3 miles of multiple use motorized single track trail with grades of 5-10%. The Project would decommission and restore to natural grade the 2-mile steep existing section of trail (25-40% grades).

Big Boulder Trail: The Project would re-route approximately 1 mile of a steep existing trail segment (25-40% grades) that climbs straight up and replace it with approximately 1 mile of multiple use motorized single track trail with grades of 5-10%. The Project would decommission and restore to natural grade the 1-mile steep existing section of trail (25-40% grades).

Connector Trails

Second Divide Trail: This proposed 0.15-mile connector trail is designed to enhance the safety and experience of users on First, Second and Third Divide Trails by building a trail that bypasses the County Road that connects the two popular trails. Currently a legal connection for motorcycle users does not exist as green sticker motorcycles are not allowed on roads not classified for their use under the *Tahoe National Forest Motorized Travel Management Record of Decision* (September 2010). This connector trail would also improve the user experience by creating a continuous single track trail that extends Second Divide Trail with a connection to First Divide Trail. The new multiple use motorized single track trail would be designed with grades of 5-10%.

Unauthorized Route Restoration

The unauthorized route to Sisson Mine, an unauthorized route near Hawley Meadow (old Gold Valley), and unauthorized route near Butcher Ranch would be removed and the land restored to a natural grade. These routes are not needed for public use and are unsustainable. Approximately 3 miles of unauthorized routes would be restored to natural conditions.

Table 2. Summary of Treatments with pre- and post-treatment CWHR Type Acres

Treatment Prescription	Acres	Pre-treatment CWHR type – Acres (same as No Action)	Alternative 1 Post Treatment change in MIS habitat by CWHR Type - Acres
Trail Construction—0.5 miles in shrubland	0.2 ac shrub	Montane chaparral (MC)	BAR: +0.2 ac. MCP: -0.2 ac.
Trail Construction in Coniferous Forests: 1.98 miles Early Seral 6.68 miles Mid Seral	1 ac. Early 3.2 ac. Mid	ponderosa pine (PPN), Sierran mixed conifer (SMC), tree sizes 1, 2, and 3, all canopy closures—4.2 acres total	BAR: +4.2 acres PPN/SMC/RFR/WFR 1,2, 3, 4 all canopy: -4.2 acres
Trail Construction/re-route—3.4 miles Late Seral Closed	1.6 ac late closed	Ponderosa pine (PPN), Sierran mixed conifer (SMC), tree sizes 5D, 6D: 1.6 ac.	BAR: +1.6 ac. PPN/SMC/RFR/WFR 5MD, 6D: -1.6 ac.
Trail Decommissioning/Restoration	6.31 mi.	BAR: 3 acres	BAR: 3 acres (will revegetate over time)

5. Effects of Proposed Project on the Habitat for the Selected Project-Level MIS. *The following section documents the analysis for the following ‘Category 3’ species: fox sparrow, mountain quail, California spotted owl, American marten, northern flying squirrel. The analysis of the effects of the Yuba Trails Enhancement Project on the MIS habitat for the selected project-level MIS is conducted at the project scale. The analysis used the following habitat data:* The Tahoe National Forest EcObject which incorporates Light Detection and Ranging (LiDAR) into the Existing Vegetation (EVEG) dataset, and cross-walked into California Wildlife Habitat Relationship types (CWHR).

Detailed information on the MIS is documented in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a), which is hereby incorporated by reference.

Cumulative effects at the bioregional scale are tracked via the SNF MIS Bioregional monitoring, and detailed in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a).

Shrubland (West-Slope Chaparral) Habitat (Fox Sparrow)

Habitat/Species Relationship.

The fox sparrow was selected as the MIS for shrubland (chaparral) habitat on the west-slope of the Sierra Nevada, comprised of montane chaparral (MCP), mixed chaparral (MCH), and chamise-redshank chaparral (CRC) as defined by the California Wildlife Habitat Relationships System (CWHR) (CDFG 2005). Recent empirical data from the Sierra Nevada indicate that, in the Sierra Nevada, the fox sparrow is dependent on open shrub-dominated habitats for breeding (Burnett and Humple 2003, Burnett et al. 2005, Sierra Nevada Research Center 2007).

Project-level Effects Analysis - Shrubland (West-Slope Chaparral) Habitat

Habitat Factor(s) for the Analysis: (1) Acres of shrubland (chaparral) habitat [CWHR montane chaparral (MCP), mixed chaparral (MCH), and chamise-redshank chaparral (CRC)]. (2) Acres with changes in shrub ground cover class (Sparse=10-24%; Open=25-39%; Moderate=40-59%; Dense=60-100%). (3) Acres with changes in CWHR shrub size class (Seedling shrub (seedlings or sprouts <3years); Young shrub (no crown decadence); Mature Shrub (crown decadence 1-25%); Decadent shrub (>25%).

Current Condition of the Habitat Factor(s) in the Project Area: The project area contains 178 acres of montane chaparral (MCP) that is dominated with dense shrubs in mature to decadent size classes.

Alternative A (Proposed Action)

Direct and Indirect Effects to Habitat. This project would relocate 0.5 miles of single-tracked trail within montane chaparral, which equates to 0.2 acres of montane chaparral that would have no shrub cover and be changed to barren (BAR). This represents a loss of 0.1% of this habitat type in the project area.

Cumulative Effects to Habitat in the Analysis Area. The spatial boundary for the cumulative effects analysis area is represented by the linear locations of all trail proposals, buffered by 0.25 miles on either side. The temporal period used is represented by vegetation at the present time, because this incorporates all previous actions as a baseline, and projects out for the next five years. Shrublands in the project area are mature and decadent due to successful fire suppression of the past 100 years. There is no recorded fire history within the project area, and there are no additional planned projects within the analysis area. This project, in combination with other actions in the planning area would remove less than 0.1% of shrub ground cover.

Cumulative Effects Conclusion: The change in shrub ground cover of 0.2 acres represents 0.1% of the 173 acres of habitat in the analysis area. This will not alter the existing trend in the habitat.

Summary of Fox Sparrow Status and Trend at the Bioregional Scale

The Tahoe NF LRMP (as amended by the SNF MIS Amendment) requires bioregional-scale habitat and distribution population monitoring for the fox sparrow; hence, the shrubland effects

analysis for the Yuba Trails Enhancement Project must be informed by both habitat and distribution population monitoring data. The sections below summarize the habitat and distribution population status and trend data for the fox sparrow. This information is drawn from the detailed information on habitat and population trends in the 2010 Sierra Nevada Forests Bioregional MIS Report (USDA Forest Service 2010a), which is hereby incorporated by reference.

Habitat Status and Trend. There are currently 1,009,681 acres of west-slope chaparral shrubland habitat on National Forest System lands in the Sierra Nevada. Over the last two decades, the trend is slightly increasing (changing from 8% to 9% of the acres on National Forest System lands).

Population Status and Trend. Monitoring of the fox sparrow across the ten National Forests in the Sierra Nevada has been conducted since 2009 in partnership with PRBO Conservation Science, as part of a monitoring effort that also includes mountain quail, hairy woodpecker, and yellow warbler (USDA Forest Service 2010a, <http://data.prbo.org/partners/usfs/snmis/>). Fox sparrows were detected on 36.9% of 1659 point counts in 2009 and 44.3% of 2266 point counts in 2010, with detections on all 10 national forests in both years. The average abundance (number of individuals recorded on passive point count surveys) was 0.563 in 2009 and 0.701 in 2010. These data indicate that fox sparrows continue to be distributed across the 10 Sierra Nevada National Forests. In addition, the fox sparrows continue to be monitored and surveyed in the Sierra Nevada at various sample locations by avian point count, spot mapping, mist-net, and breeding bird survey protocols. These are summarized in the 2008 Bioregional Monitoring Report (USDA Forest Service 2008). Current data at the rangewide, California, and Sierra Nevada scales indicate that, although there may be localized declines in the population trend, the distribution of fox sparrow populations in the Sierra Nevada is stable.

Relationship of Project-Level Habitat Impacts to Bioregional-Scale Fox Sparrow Trend.

The change in shrub ground cover of 0.2 acres, or 0.1% in the Yuba Trails Enhancement Project Area will not alter the existing trend in the habitat, nor will it lead to a change in the distribution of fox sparrows across the Sierra Nevada bioregion.

Early and Mid Seral Coniferous Forest Habitat (Mountain quail)

Habitat/Species Relationship.

The mountain quail was selected as the MIS for early and mid seral coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, red fir, and eastside pine) habitat in the Sierra Nevada. Early seral coniferous forest habitat is comprised primarily of seedlings (<1" dbh), saplings (1"-5.9" dbh), and pole-sized trees (6"-10.9" dbh). Mid seral coniferous forest habitat is comprised primarily of small-sized trees (11"-23.9" dbh). The mountain quail is found particularly on steep slopes, in open, brushy stands of conifer and deciduous forest and woodland, and chaparral; it may gather at water sources in the summer, and broods are seldom found more than 0.8 km (0.5 mi) from water (CDFG 2005).

Project-level Effects Analysis – Early and Mid Seral Coniferous Forest Habitat

Habitat Factor(s) for the Analysis: (1) Acres of early (CWHR tree sizes 1, 2, and 3) and mid seral (CWHR tree size 4) coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, red fir, and eastside pine) habitat [CWHR ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree sizes 1, 2, 3, and 4, all canopy closures]. (2) Acres with changes in CWHR tree size class. (3) Acres with changes in tree canopy closure. (4) Acres with changes in understory shrub canopy closure.

Current Condition of the Habitat Factor(s) in the Project Area: This project area contains a total of 2,426 acres of early and mid-seral habitats of ponderosa pine (PPN), red fir (RFR), Sierran mixed conifer (SMC), and white fir (WFR), broken down as follows: 1,025 acres of early and 1,401 acres of mid-seral.

Alternative A (Proposed Action)

Direct and Indirect Effects to Habitat. This project would re-locate 1.98 miles of trail (1 acre) within early seral habitats and 6.68 miles of trail (3.2 acres) within mid-seral habitat. These represent to 0.1% of early and 0.2 % of mid-seral habitat that are present in the project area changing to barren (BAR). These total 0.3% of early and mid-seral habitats that are present.

Cumulative Effects to Habitat in the Analysis Area.

Cumulative Effects Conclusion: The spatial boundary for the cumulative effects analysis area is represented by the linear locations of all trail proposals, buffered by 0.25 miles on either side. The temporal period used is represented by vegetation at the present time, because this incorporates all previous actions as a baseline, and projects out for the next five years. There are no additional planned projects within the analysis area. This project, in combination with other actions in the planning area would remove less than 0.3% of early and mid-seral habitats in the project area, which represents a very small amount. This small reduction of habitat will not alter the existing trend in the habitat.

Summary of Mountain Quail Status and Trend at the Bioregional Scale

The Tahoe NF LRMP (as amended by the SNF MIS Amendment) requires bioregional-scale habitat and distribution population monitoring for the mountain quail; hence, the early and mid seral coniferous forest effects analysis for the Yuba Trails Enhancement Project must be informed by both habitat and distribution population monitoring data. The sections below summarize the habitat and distribution population status and trend data for the mountain quail. This information is drawn from the detailed information on habitat and population trends in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a), which is hereby incorporated by reference.

Habitat Status and Trend. There are currently 530,851 acres of early seral and 2,776,022 acres of mid seral coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, and red fir) habitat on National Forest System lands in the Sierra Nevada. Over

the last two decades, the trend for early seral is decreasing (changing from 9% to 5% of the acres on National Forest System lands) and the trend for mid seral is increasing (changing from 21% to 25% of the acres on National Forest System lands).

Population Status and Trend. Monitoring of the mountain quail across the ten National Forests in the Sierra Nevada has been conducted since 2009 in partnership with PRBO Conservation Science, as part of a monitoring effort that also includes fox sparrow, hairy woodpecker, and yellow warbler (USDA Forest Service 2010a, <http://data.prbo.org/partners/usfs/snmis/>). Mountain quail were detected on 40.3 percent of 1659 point counts (and 48.6% of 424 playback points) in 2009 and 47.4% of 2266 point counts (and 55.3% of 492 playback points) in 2010, with detections on all 10 national forests in both years. The average abundance (number of individuals recorded on passive point count surveys) was 0.103 in 2009 and 0.081 in 2010. These data indicate that mountain quail continue to be distributed across the 10 Sierra Nevada National Forests. In addition, mountain quail continue to be monitored and surveyed in the Sierra Nevada at various sample locations by hunter survey, modeling, and breeding bird survey protocols. These are summarized in the 2008 Bioregional Monitoring Report (USDA Forest Service 2008). Current data at the rangewide, California, and Sierra Nevada scales indicate that the distribution of mountain quail populations in the Sierra Nevada is stable.

Relationship of Project-Level Habitat Impacts to Bioregional-Scale Mountain Quail Trend.

The change in less than 0.3% of early and mid seral coniferous forest habitat in the Yuba Trails Enhancement Project Area will not alter the existing trend in the habitat, nor will it lead to a change in the distribution of mountain quail across the Sierra Nevada bioregion.

Late Seral Closed Canopy Coniferous Forest Habitat (California spotted owl, American marten, and northern flying squirrel)

Habitat/Species Relationship.

California spotted owl. The California spotted owl was selected as an MIS for late seral closed canopy coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, and red fir) habitat in the Sierra Nevada. This habitat is comprised primarily of medium/large trees (equal to or greater than 24 inches dbh) with canopy closures above 40% within ponderosa pine, Sierran mixed conifer, white fir, and red fir coniferous forests, and multi-layered trees within ponderosa pine and Sierran mixed conifer forests. The California spotted owl is strongly associated with forests that have a complex multi-layered structure, large-diameter trees, and high canopy closure (CDFG 2005, USFWS 2006). It uses dense, multi-layered canopy cover for roost seclusion; roost selection appears to be related closely to thermoregulatory needs, and the species appears to be intolerant of high temperatures (CDFG 2005). Mature, multi-layered forest stands are required for breeding (Ibid). The mixed-conifer forest type is the predominant type used by spotted owls in the Sierra Nevada: about 80 percent of known sites are found in mixed-conifer forest, with 10 percent in red fir forest (USDA Forest Service 2001).

American Marten. The American marten was selected as an MIS for late seral closed canopy coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, and red fir) habitat in the Sierra Nevada. This habitat is comprised primarily of medium/large trees (equal to or greater

than 24 inches dbh) with canopy closures above 40% within ponderosa pine, Sierran mixed conifer, white fir, and red fir coniferous forests, and multi-layered trees within ponderosa pine and Sierran mixed conifer forests. Martens prefer coniferous forest habitat with large diameter trees and snags, large down logs, moderate-to-high canopy closure, and an interspersed of riparian areas and meadows. Important habitat attributes are: vegetative diversity, with predominately mature forest; snags; dispersal cover; and large woody debris (Allen 1982). Key components for westside and eastside marten habitat can be found in the Sierra Nevada Forest Plan Amendment FEIS (USDA Forest Service 2001), Volume 3, Chapter 3, part 4.4, pages 20-21.

Northern flying squirrel. The northern flying squirrel was selected as an MIS for late seral closed canopy coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, and red fir) habitat in the Sierra Nevada. This habitat is comprised primarily of medium/large trees (equal to or greater than 24 inches dbh) with canopy closures above 40% within ponderosa pine, Sierran mixed conifer, white fir, and red fir coniferous forests, and multi-layered trees within ponderosa pine and Sierran mixed conifer forests. The northern flying squirrel occurs primarily in mature, dense conifer habitats intermixed with various riparian habitats, using cavities in mature trees, snags, or logs for cover (CDFG 2005).

Project-level Effects Analysis – Late Seral Closed Canopy Coniferous Forest Habitat.

Habitat Factor(s) for the Analysis: (1) Acres of late seral closed canopy coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, and red fir) habitat [CWHR ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), tree size 5 (canopy closures M and D), and tree size 6]. (2) Acres with changes in canopy closure (D to M). (3) Acres with changes in large down logs per acre or large snags per acre.

Current Condition of the Habitat Factor(s) in the Project Area: The project area contains 423 acres of late seral closed canopy coniferous forests comprised of ponderosa pine (PPN), red fir (RFR), Sierran mixed conifer (SMC) and white fir (WFR).

Alternative A (Proposed Action)

Direct and Indirect Effects to Habitat. This project would relocate 3.4 miles of single-tracked trail (1.6 acres) within this habitat type. Although this equates to the removal of 0.4% of this habitat type, changing it to BAR within the trail prism, this does not represent a biologically meaningful change in this habitat type. Trail location would be placed to avoid the removal of trees, especially very large trees. Most trail construction would require the removal of smaller trees and shrubs, and not change overstory canopy within stands. The trail prism is only 4 feet wide, and occurs in a linear fashion, which is smaller than the average spacing of trees in this habitat type.

Cumulative Effects to Habitat in the Analysis Area. The spatial boundary for the cumulative effects analysis area is represented by the linear locations of all trail

proposals, buffered by 0.25 miles on either side. The temporal period used is represented by vegetation at the present time, because this incorporates all previous actions as a baseline, and projects out for the next five years. There are no additional planned projects within the analysis area. This project, in combination with other actions in the planning area would remove less than 0.4% of late seral closed canopy habitats in the project area, which represents a very small amount. This small reduction of habitat will not alter the existing trend in the habitat.

Cumulative Effects Conclusion: The change in understory ground cover within 0.4% of late seral closed canopy habitats in the project area will not alter the existing trend in the habitat.

Summary of Status and Trend at the Bioregional Scale

California spotted owl, American marten, and Northern flying squirrel. The Tahoe NF LRMP (as amended by the SNF MIS Amendment) requires bioregional-scale habitat and distribution population monitoring for the California spotted owl, American marten, and northern flying squirrel; hence, the late seral closed canopy coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, and red fir) habitat effects analysis for the Yuba Trails Enhancement Project must be informed by both habitat and distribution population monitoring data. The sections below summarize the habitat and distribution population status and trend data. This information is drawn from the detailed information on habitat and population trends in the 2010 SNF Bioregional MIS Report (USDA Forest Service 2010a), which is hereby incorporated by reference.

Habitat Status and Trend. There are currently 1,006,923 acres of late seral closed canopy coniferous forest (ponderosa pine, Sierran mixed conifer, white fir, and red fir) habitat on National Forest System lands in the Sierra Nevada. Over the last two decades, the trend is slightly increasing (changing from 7% to 9% of the acres on National Forest System lands); since the early 2000s, the trend has been stable at 9%.

Population Status and Trend - California spotted owl. California spotted owl has been monitored in California and throughout the Sierra Nevada through general surveys, monitoring of nests and territorial birds, and demography studies (Verner et al. 1992; Gutierrez et al. 2008, 2009, 2010; USDA Forest Service 2001, 2004, 2006b; USFWS 2006; Sierra Nevada Research Center 2007, 2008, 2009, 2010). Current data at the rangewide, California, and Sierra Nevada scales indicate that, although there may be localized declines in population trend [e.g., localized decreases in “lambda” (estimated annual rate of population change)], the distribution of California spotted owl populations in the Sierra Nevada is stable.

Population Status and Trend – American marten. American marten has been monitored throughout the Sierra Nevada as part of general surveys and studies since 1996 (e.g., Zielinski et al. 2005, Moriarty 2009). Since 2002, the American marten has been monitored on the Sierra Nevada forests as part of the Sierra Nevada Forest Plan Amendment (SNFPA) monitoring plan (USDA Forest Service 2005, 2006b, 2007b, 2009,

2010b). Current data at the rangewide, California, and Sierra Nevada scales indicate that, although marten appear to be distributed throughout their historic range, their distribution has become fragmented in the southern Cascades and northern Sierra Nevada, particularly in Plumas County. The distribution appears to be continuous across high-elevation forests from Placer County south through the southern end of the Sierra Nevada, although detection rates have decreased in at least some localized areas (e.g., Sagehen Basin area of Nevada County).

Population Status and Trend – northern flying squirrel. The northern flying squirrel has been monitored in the Sierra Nevada at various sample locations by live-trapping, ear-tagging, camera surveys, snap-trapping, and radiotelemetry: 2002-present on the Plumas and Lassen National Forests (Sierra Nevada Research Center 2007, 2008, 2009, 2010), and 1958-2004 throughout the Sierra Nevada in various monitoring efforts and studies (see USDA Forest Service 2008, Table NOFLS-IV-1). These data indicate that northern flying squirrels continue to be present at these sample sites, and current data at the rangewide, California, and Sierra Nevada scales indicate that the distribution of northern flying squirrel populations in the Sierra Nevada is stable.

Relationship of Project-Level Habitat Impacts to Bioregional-Scale Trends.

California spotted owl. The change in understory structure of 0.4% of late seral closed canopy coniferous forest habitat in the Yuba Trails Enhancement Project Area will not alter the existing trend in the habitat, nor will it lead to a change in the distribution of California spotted owl across the Sierra Nevada bioregion.”

American marten. The change in understory structure of 0.4% of late seral closed canopy coniferous forest habitat in the Yuba Trails Enhancement Project Area will not alter the existing trend in the habitat, nor will it lead to a change in the distribution of American marten across the Sierra Nevada bioregion.

Northern flying squirrel. The change in understory structure of 0.4% of late seral closed canopy coniferous forest habitat in the Yuba Trails Enhancement Project Area will not alter the existing trend in the habitat, nor will it lead to a change in the distribution of Northern flying squirrel across the Sierra Nevada bioregion.

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